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Statisticians can help to improve human rights reporting. The statistician's approach to measurement, summary, and interpretation is needed to understand and help reduce human rights violations. Statistical problems in the measurement and analysis of human rights violations include: lack of agreement on the definition; great difficulties in collecting basic data; lack of knowledge of the subject among statisticians; lack of knowledge of statistics among other human rights practitioners; and the need for appropriate methodology. The statistical problems are analogous to other measurement problems, and can be similarly resolved, but a continuing need for interdisciplinary teams is seen. (Author)

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HUMAN RIGHTS AND THE STATISTICIAN

By Herbert F. Spirer

1988 Joint Statistical Meetings New Orleans August 24, 1988

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HUMAN RIGHTS AND THE STATISTICIAN

By Herbert F. Spirer*

ABSTRACT. *Statisticians* can help to improve *human rights* reporting. The statisticians' approach to *measurement, summary* and *interpretation* is needed to understand and help reduce human rights violations. Statistical problems in the measurement and analysis of human rights violations include: lack of agreement on the *definition*, great difficulties in collecting *basic data, lack of knowledge of the subject* among statisticians, lack of knowledge of statistics among other human rights practitioners, and the need for *appropriate methodology*. The statistical problems are analogous to other measurement problems, and can be similarly resolved, but a continuing need for *interdisciplinary teams* is seen.

I

INTRODUCTION

Can statisticians add to knowledge of the status of human rights? Although he stated that the "scientific-statistical analysis of human rights appears at first unnecessary and harmful," the president of American Statistical Association but the "quantitative features ... are needed to understand and help eliminate the causes and results of human rights deprivations."[1] Toward this end, the Ford Foundation funded a project of the American Association for the Advancement of Science to "determine how statistical techniques can be used to improve human rights reporting and analysis."[2]

Statisticians are as concerned with policy as political scientists, legal scholars, sociologists and other social scientists who study and analyze human rights. Statisticians collect, summarize and interpret data to provide inputs to the political process. But the statisticians' viewpoint is different in its concern for measurement, meaningful summarization and interpretation, rather than conformity to norms or finding theoretical explanations.

What are the major statistical problems in the reporting and analysis of human rights violations? Good basic data are hard to come by. Definitions of human rights vary, deliberate suppression and withholding of information about human rights violations usually is the rule; and most statisticians do not have a thorough knowledge of the subject. To find an appropriate methodology, we may have to borrow from many disciplines. Interpreting the results is challenging.

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*[Herbert F. Spirer, Ph.D., is professor of information management, School of Business Administration, University of Connecticut, Stamford, CT 06903.] I am indebted to Dr. Helen Fein, Dr. Thomas Jabine, Dr. A. J. Jaffe and Louise Spirer.

In this paper I discuss some of the statistical issues of definition, basic data collection and quality, subject knowledge, methodology and interpretation in the quantification of the status of human rights. My examination leads me to believe that the statistical aspects of the measurement of human rights are similar to those of other measurement problems, and could be resolved similarly.

II

DEFINITION

Ideally, it is purpose that determines the definition of a statistic. Thus in the U.S., the labor market is defined as the employed non-institutionalized civilians plus the unemployed who are actively seeking jobs.[3] Many criticize the Bureau of the Census for not counting people without a job who have given up looking for work. But since the original purpose of the measurement of labor force was to determine how much money and effort to allocate to job creation programs in the Great Depression of the 1930s, it made no sense to define an unemployment statistic which counted people who were not looking for jobs. (Today, we might define the labor force differently.)

Quantification serves general purposes, not particular. Politicians can use knowledge of the number of unemployed to institute nationwide programs, but no one will use such knowledge to find a job for a particular unemployed person. Quantification of human rights can serve general purposes also, to improve conformity with standards of human rights behavior throughout the world. But it cannot help a particular victim of human rights violations.

What -- and whose -- purpose is to be served by the quantification of human rights? Governments do respond to public awareness and to pressure from donor countries or trading partners. For example, the Congress of the United States pressures some states by conditioning foreign aid on improvement in internal human rights.[4]

But whose concept of human rights to evaluate? This concept, like unemployment, has changed with time, differs among cultures, differs among states and is influenced by the biases and intent of the viewer.[5] Is there a statistical definition for this concept which is acceptable to most of the over 200 states in the world? One possible such definition is the Universal Declaration of Human Rights (UDHR).[6] Over 120 member states of the United Nations adhere to this declaration. The UDHR is a general statement of principles, and I believe, as do Dominguez and others,[7] that the UDHR is a good starting point -- if only because so many countries have formally consented to it.

Where does the UDHR take us? It ranges from the right not to be killed or tortured to the rights to self- and cultural development. Few states adhering to the UDHR openly argue for the right to kill citizens for their political opinions. But what about providing housing and food for all citizens? And the right to move within the state and to leave and return? All of these are rights in the UDHR. Does the United States, a signatory, subscribe to the former, and the USSR, also a signatory, to the latter?[8] Is there a difference in degree between rights? A violation of the right to self-development, for example, does not threaten the integrity of the

individual in the same way as does killing, torture, slavery, servitude, arbitrary arrest and exile.

I feel that a necessary first step is to discriminate between the integrity of the person and the other rights in the UDHR. My concern is to define a limited subset of critical human rights which is likely to gain wide acceptance. Many persons stretch human rights to include trivial matters.[9] As Jenny Teichman says in speaking of violence, "the word has been re-defined by political polemicists of both right and left. The left stretch the meaning so that many activities which in themselves involve no physical force are said to be violent in a new, semi-technical sense; while the right subject the term to a kind of surgery the result of which is that only the illegal use of force can be called violence."[10]

Helen Fein, director of the Institute for the Study of Genocide, defines a subset of human rights called "life integrity claims." These are the rights which protect the biological and social integration of persons and groups.[11] The first column of Table 1 is Fein's listing of life integrity rights by category.[12]

Table 1 invites a statistician to count. We can conceive of counting the entries identified as countable (how many persons in reeducation camps?). But others are inherently uncountable (what are the limits on due process?). Uncountable violations can be ranked (one state is better than another) and quantified in other ways, but such ordering usually is subjective and the results may be vary with the rankers' viewpoints.

Does this table settle the issue of definition? Probably not. But if we accept the countable violations of Table 1 as being the majority of enumerable violations then we can avoid the "stretching" of human rights to the point where no measurement is conceivable.

III

THE BASIC DATA

When defined, data can be collected. But what is the quality of these data? Are they correct, wrong, mythical, or biased? Is it practically possible to count the theoretically countable violations of Table 1? Can anyone count disappearances in a country where such things happen? Who can and will count torture cases in an authoritarian or totalitarian state?

Many people -- statisticians and nonstatisticians -- despair of enumerating these variables of horror. Why? Because there are problems of definition? Because the values are politically charged? Because the data from different sources conflict? You might say the same for the data on international balances of trade which don't add up on an individual or aggregate basis -- although the stakes are different.[13] Even so, these numbers are often good enough for decision-making.

Are we unable to deal with deliberate suppression of data? Most statisticians have experienced it. The consequences may not be as severe as in the case of human rights, but the methods of analysis are the same. Quality control data are altered, hidden and refused.[14] Inventory outages are not reported, documents are altered, and some respondents lie to protect their jobs. The same motives, on a different scale, account for the deceits of the perpetrators of human rights violations.

Statisticians are accustomed to the artifactual nature of data, and to the problems of data quality. We do not always resolve them. But these problems do not stop us from getting and analyzing data that can be used to make useful decisions and set public policy.

One function of statistical methodology is to make estimates (and specify their precision) from such data as can be obtained. In World War II, Allied statisticians were able to make useful estimates of the number of Nazi tanks based on the serial numbers of captured tanks.[15] Epidemiologists base decisions about disease on inferences from incomplete data. Can we believe that all cases of AIDS infection, illness or death are reported? Some cases are hidden during life, others after death, either deliberately or through ignorance. To try to directly enumerate all infected persons through direct observation is hard and dangerous, although easier and less dangerous than trying to directly enumerate cases of torture. We cannot now hope to know the precise number of AIDS cases in the United States. But we can infer estimates from existing data and make useful (not highly precise, but useful!) comparisons among different geographical regions and times.[16]

Does anyone foresee teams of observers entering states which violate human rights on a grand scale and interviewing scientifically selected samples of prison inmates? The countries most in need of counting are the least likely to allow such scientific data collection. Nor will many other countries be likely to allow such inspection. But there are internal, non-governmental organizations which try to count violations -- and in some cases, succeed.

The U.S. State Department reported time series data from non-governmental observer organizations on deaths attributable to political violence in El Salvador.[17] The values of four of these time series tend to rise and fall together, even though they differ by as much as a factor of three. Is it possible that all four are measuring different aspects of the same underlying phenomenon? Rising and falling together, they show the general direction of movement. They help to answer the question: Is the human rights situation improving or worsening?

IV

KNOW THE SUBJECT

Whether data are collected in the field -- hard as that may be -- or drawn from secondary sources, there will be many cases of conflicting data. Some data are good, some are bad, and some may be useful in making an estimate. But to make sensible uses of the data, the statistical analyst must know the subject, or team up with specialists who do.

In the short run, statisticians with in-depth subject matter knowledge in this field will be hard to come by. The subject calls for knowledge of general and international law, human rights history and practice, geography, political science and practical politics. And in any particular case, effective work can require a thorough knowledge of another language and culture. How many statisticians have or can quickly acquire most -- let alone, all-- of the above attributes?

Current scholarship in human rights reflects the small number of statisticians working in the field. In an issue of the *Human Rights*

Quarterly whose "objective ... [is] ... to explore the possibilities for improving the analysis of human rights with the assistance of statistical and other quantitative tools," only three of the 16 contributors are statisticians and only one other (an epidemiologist) has a biography that suggests familiarity with statistical methods.[18] None of the 31 contributors in the five other recent issues of the same journal has a statistical background.

Can social scientists and legal scholars carry the burden alone? Social scientists often have knowledge of statistical principles and usually team up with statisticians for measurement projects. But lawyers are rarely involved in quantification of basic concepts of the type proposed for human rights evaluation.

In such situations we usually look to education to broaden the scope of workers in a field. Columbia University's Center for the Study of Human Rights has prepared a special syllabus for graduate students.[19] Titled *International Human Rights: Politics & Law. A Syllabus*, it does not discuss the problems of data collection, summarization and measurement. J. Paul Martin, director of the Center, argues for formal education in human rights to "help students link critical thinking and moral conviction as well as refine their understanding of how social change takes place and how it is or is not influenced by norms and by groups and individuals."[20] He does not call for instruction in the statistical measurement of human rights condition.

Unfortunately, law students have been shown to have special problems in learning to reason statistically as compared to other disciplines:

> In both cross-sectional and longitudinal studies of the effect of training, law and chemistry students improved much less in their statistical reasoning than psychology and medical students. In similar studies of reasoning about the logic of the conditional, law students performed as well as others. There is a strong suggestion that training in contractual relations does not generalize to statistical reasoning as well as it does to logical reasoning.[21]

Human rights is a field which makes unique demands for interdisciplinary education and research. We may never have many sufficiently inter-disciplinary individuals in this field. Political scientists, legal scholars, statisticians, anthropologists, sociologists will have to work together to get results that will stand as objective measures of situations. The unidimensional work we are now seeing is better than nothing, but that is not good enough.

Statisticians alone are not likely to produce high-quality statistics for human rights, unless they are thoroughly familiar with the subject matter.[22] And practitioners from other disciplines are not likely to produce high-quality statistics without the aid of statisticians.

V

INTERPRETATION

Counts and summaries by themselves do not suffice for drawing sound conclusions. Someone must interpret the results to answer the relevant questions. Is there a human rights problem in country A? Has country B improved human rights conditions? What is the effect of the intervention of country C? Have international sanctions improved or worsened the situation in country D? Does the situation in country E appear to be moving toward mass killing based on comparison with states which have had known mass killings?

A recent report on the number of political prisoners in Cuba is an example of the problem of interpretation. In a newspaper story, the U.S. government estimates that Cuba is holding more than 15,000 political prisoners, "based on information it has obtained mainly from recently released prisoners." The Cuban Committee on Human Rights (a dissident group in Havana) estimates 10,000 to 15,000 political prisoners. Amnesty International estimates that the number is "as high as several thousand." The spokesman for the Cuba's Ministry of Foreign Affairs says that there are fewer than 800 political prisoners in Cuba's jails.[23]

Is one or several of these estimates ectoplastistics?[24] Or do they all tell the truth? "All numbers if accurately recorded and precisely determined are correct insofar as they meet their definitions."[25]

Treaster, in his article, reported only the definition of the spokesman for Cuba's Ministry of Foreign Affairs:

> The figure .... included people accused of sabotage, disrupting public order, threatening state security and working with United States intelligence.... [It does not include] people being held for trying to leave the country and those who refuse to serve in the armed forces.

Compare the Cuban definition of a political prisoner to the definition given by Amnesty International for a prisoner of conscience:

> ...persons who in violation of the aforesaid provisions [those of the Universal Declaration of Human Rights] are imprisoned, detained or otherwise physically restricted by reason of their political, religious or other conscientiously held beliefs or by reason of their ethnicorigin, sex, colour or language, provided that they have not used or advocated violence (hereinafter referred to as 'Prisoners of Conscience');[26]

The U.S. State Department has a similar criterion.[27] A political prisoner is a person who is incarcerated without a charge either for exercising a fundamental right, because of beliefs, or because of membership in a political association or membership in a particular social group (religious, ethnic, language). However, the exact definition in any case is determined by situation and country specifics![28]

We don't know the definition used by the Cuban Committee on Human Rights. One thing is sure: If the different parties are making estimates of different variables, we can't directly compare these estimates. Any reasonable interpretation must take such issues into account.

VI

METHODOLOGY

Statistical methods range from simple tabulation of data to complex analyses using supercomputers. I do not propose to discuss advanced or sophisticated methods, only to exemplify the need for care in choosing methods.

In the past 18 months, I have seen three papers -- one by an economist and two by political scientists -- which claim to explain the differences in human rights status by the nature of the cultural, political and economic system of the state.[29] All used similar methods, the analysis of *association* among variables by the use of correlation or regression analysis. If two or more variables are associated (go up and down together) we know no more than that. We can not conclude that there is a cause-and-effect relationship. Unfortunately, the use of a complex methodology seems to lead some researchers to ignore this caution and the authors of two of the three papers explicitly attribute cause where they find only association.

I discuss the most recent of the three. In it Han S. Park says that, if we can show that "the degree of human rights violations co-varies with certain contextual characteristics of the society," then we will have predictors of human rights practices. And, "If the predictor is subject to change by policies, then the condition of human rights in that society can be altered."[30] He uses three numbers as measures of a nation's human rights status: Gastil's subjective indices of political rights and civil liberties,[31] the unweighted mean of infant mortality, literacy rate and life expectancy (the Physical Quality of Life Index, "PQLI"),[32] and a measure of the inequity in income. Only Gastil's indices (which are not based on enumeration of life integrity violations) are directly related to rights. The PQLI and inequity in income are not human rights in the sense of Table 1. Park uses ethnic diversity, the percentages of Christian, Islamic and urban populations, and welfare, military and educational expenditures as variables which might explain and predict human rights.

Park does a computer-assisted analysis; a complex tool leads to complex results and I discuss only a few. He finds that high welfare expenditures are associated with good values of all three of his human rights measures. High military expenditures are associated with low values of the PLQI but with good values of Gastil's political liberties index. And so forth. Park states that changing discretionary variables (such as welfare expenditures) will cause an improvement in human rights (that is, the values of the measures he uses).

My concern as a statistician about this methodology is that its apparent complexity will discourage the non-statistician from questioning the results. There are several methodological flaws in the analysis. However, the leap from an apparent finding of *association* to *cause* is fatal.

To show its seriousness, I performed a correlation analysis for Gastil's indices and the percentage of women using contraceptive methods.[33] The correlation for this explanatory variable is higher than any found by Parks. His faulty logic would have us conclude that increasing contraceptive use by women is a effective way to improve human rights.

VII

CONCLUSION

I agree with those statisticians who feel that statistical data, carefully compiled and analyzed, can have value in improving the status of human rights in the world. I propose that:

The statistical problems in the measurement of human rights differ in degree rather than kind from the problems of measuring other politically important concepts. Political scientist Robert Goldstein agrees, saying "that many of the problems which bedevil the use of quantitative data for humans rights studies are common to other topics";[34]

"Stretching" of human rights beyond the narrow boundaries of Life Integrity Violations prevents systematic measurement and trivializes mass horrors;

Data collection is difficult, but the problems are analogous to those of epidemiology and amenable to statistical analysis;

Interdisciplinary teams can make up for gaps in individual subject-matter knowledge;

Long-term success is contingent on educating human rights researchers and practitioners in working with statisticians;

Statistical methods have much to offer, but aptness and good sense in their use are essential.

TABLE 1

Life Integrity Violation	Variable
COUNTABLE	
Coerced labor	Number of persons in coerced labor
Coerced labor for term	Number of persons coerced labor
Concentration camps	Number of inmates
Deliberate starvation	Number starved
Detention camps	Number of inmates
Extermination camps	Number of inmates
Forcible transfer of children	Number of children transferred
Infrequent torture	Number tortured
Involuntary extended separation	Number of separations
Involuntary separation	Number of separations
Mass killing	Number of deaths
Permanent injury	Number injured
Permanent separation	Number of separations
Prisoners of conscience	Number of prisoners
Rape	Number of raped persons
Reeducation camps	Number of inmates
Routine torture	Number tortured
Selective genocide	Number of deaths
Slave labor	Number held in slave labor
Some torture	Number tortured
Systematic killing	Number of deaths
Torture to death	Number of deaths
Work to death	Number of deaths
UNCOUNTABLE	
Apartheid	
Denial of free movement outside state	
Denial of free movement within state	
Fewer limits on process	
Legal sanctions unused	
Legal sanctions used	
Measures to prevent births	
No due process	
No family	
Pass system	
Restricted labor	
Segregation	
Serious bodily & mental harm	
Some limits on process	

Notes

1. Richard I. Savage, "Hard-Soft Problems," *Journal of the American Statistical Association*, Vol. 80, No. 389 (March 1985), pp. 1-7.

2. Richard P. Claude and Thomas B. Jabine, "Editors' Introduction," *Human Rights Quarterly*, Vol. 8, No. 4 (November 1986), p. 610.

3. In 1983, the Reagan administration added the number of military personnel (who are employed and working) to the civilian labor force. This has a politically significant effect on the unemployment rate of nonwhite males. The statistic was redefined to serve a political purpose. See A. J. Jaffe and Herbert F. Spirer, H.F., *Misused Statistics: Straight Talk about Twisted Numbers* (New York: Marcel Dekker, Inc., 1987), pp. 120-121.

4. For example, in Sections 116(d) and 502(b) of the Foreign Assistance Act of 1961, as amended. Non-quantitative reports on human rights practices in 170 states appear in *Country Reports on Human Rights Practices for 1987*, (Washington DC: U.S. Government Printing Office, 1988).

5. For an overview of cultural differences, see Kenneth W. Thompson, ed., *The Moral Imperatives of Human Rights: A World Survey* (Washington DC: University Press of America, 1980).

6. United Nations, *The International Bill of Rights: A. Universal Declaration of Human Rights*, (New York: United Nations, 1948).

7. Jorge I. Dominguez, "Assessing Human Rights Conditions," in Dominguez, Rodley, Wood, and Falk, *Enhancing Global Human Rights* (NY: McGraw Hill, 1979).

8. "Clearly the U.S. government and many conservative scholars do not really endorse the Universal Declaration's assertion that everyone in the world is entitled to enough 'food, clothing, housing and medical care' adequate for their 'health and well-being'; clearly the Soviet government and many liberal scholars do not really accept the Universal Declaration's assertion of a right to own property," from Robert J. Goldstein, "The Limitations of Using Quantitative Data in Studying Human Rights Abuses," *Human Rights Quarterly*, Vol. 8, No. 4 (November 1986), p. 610.

9. "[a particular human rights activist] consider[s] that one has a 'human right' to a kidney if one person had two and another person needed one," anonymous, private communication. I have been told that a reduction in the budget of a urban library was genocide.

10. Jenny Teichman, *Pacifism and the Just War* (NY: Basil Blackwell Inc, 1986). As she says, "It is natural for polemicists to seek terminological advantages over their opponents, and the stipulative re-definition of words which are important in political or ethical debate is one of the easiest ways of creating the appearance of advantage. Slogans and new coinages confer advantage of this kind." [pp. 25-6] We seek measurement, not debate.

11. Helen Fein, "Discriminating States of Horror: Life Integrity Violation Analysis." Paper read at the Annual Meeting of the American Sociological Association, 24-28 August 1988, at Atlanta GA.

12. I replaced her "Selective genocide" with "Disappearances."

13. For the conflict between the Japanese and American data, see H. S. Scott, "Japan's Trade Figures: A Matter of Accounting," *New York Times*, (29 December 1979). For the international imbalance, see "Black Holes," *The Economist*, (19 Sep 1987).

14. Author's personal experience. In one case, the rumor that data on medical instrument repairs was to be collected for internal analysis

triggered a "shredding party." There is nothing new under the sun.

15. Richard Ruggles, and Henry Brodie, "An Empirical Approach to Economic Intelligence in World War II," *Journal of the American Statistical Association*, Vol. 42, pp. 72-91.

16. B. Lambert, "New York Maps the Patterns of AIDS: Demographic Breakdowns Trace the Toll," *New York Times*, (13 December 1987).

17. U.S. Department of State, *Report on the Situation in El Salvador with Respect to the Subjects Required in Section 728(d) of the Internal Security and Development Act of 1981, P.L. 97-113*, Washington DC: U.S. Department of State (July 27, 1982). The correlation coefficients among four of five agencies ranged from .74 to .83.

18. *Human Rights Quarterly*, Vol. 8, No. 4 (November 1986), p. 551. Determination of statistical background based on the published biographies (pp. 75-6).

19. Louis Henkin, *International Human Rights: Politics & Law. A Syllabus*, (NY: Center for the Study of Human Rights, Columbia University, July 1983).

20. J. Paul Martin, "Human Rights -- Education for What?" *Human Rights Quarterly*, Vol. 9, No. 3 (August 1987), p. 414.

21. R. Nisbett, G. Fong, D. Lehman, and P. Cheng, "Teaching Reasoning," *Science* Vol. 238, (30 Oct 87), pp. 625-632.

22. In talking of a human rights analysis by a statistician, political scientist Michael Stohl says, "It is the work of one well-meaning researcher who reveals in his introductory remarks a singular lack of the methodological analysis required for such a task." Michael Stohl, "State Violation of Human Rights: Issues and Problems of Measurement," *Human Rights Quarterly*, Vol. 8, No. 4 (November 1986), p. 601.

23. Joseph B. Treaster, "Is Castro More Tolerant? 2 Dissidents Test the Water," *New York Times*, (5 August 1987).

24. Ectoplastistics is the word we use to describe numbers which are emitted without serious regard for their truth. See Chapter 13, Jaffe and Spirer, *Misused Statistics*.

25. A. J. Jaffe, "Definitions Lead -- Statistics Follow. *New York Statistician*, Vol. 38, No. 5a, p. 5.

26. *Amnesty International Report 1984.*(London: Amnesty International Publications. Part a) of Article 1 (OBJECT) of the Statute of Amnesty International), p. 373.

27. Telephone discussion on 10 August 1987 with an officer of the U.S. State Department Refugee Program.

28. The U.S. Embassy in the concerned country makes the final decision as to who is a political prisoner, considering factors such as the country's laws, the intentions of arresting and court officers, and systematic patterns of harassment. Unfortunately for the cause of statistics, the State Department's primary concerns are legal and political, consistent counts are less important than qualifying or disqualifying refugees. An invariant definition does not serve their purposes.

29. One was a paper which I anonymously reviewed for a journal, the other was a paper read by Dr. Fred Kort of the University of Connecticut at the First Annual New England Statistics Symposium (April 1987), and the other is the example discussed here.

30. Han S. Park, "Correlates of Human Rights: Global Tendencies," *Human*

Rights Quarterly Vol. 9 (1987), p. 405-413.

31. Raymond D. Gastil, *Freedom in the world 1985-1986* (New York: Freedom House, issued annually).

32. Morris D. Morris, *Measuring the conditions of the world's poor: The Physical Quality of Life Index* (New York: Pergamon Press, 1979).

33. Herbert F. Spirer, [Sitzfleisch, Vladimir]. "Improvement of Human Rights." Accepted for 1988 publication in the *New York Statistician*.

34. Robert J. Goldstein, "Limitations of Quantitative Data," *Human Rights Quarterly*, Vol. 8, No. 4 (November 1986), p. 609.